

## **EXHIBIT 27**

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plus or minus 5 percent, and shall be set to provide 26.4 volts on the panel direct current bus. Power supplies shall be Power One, or equal.

## 2.09 RECORDER STATION

### A. General

1. The recorder shall be preprogrammed to indicate and record process variables. Preprogrammed functions shall consist of assigning inputs, outputs, and scale factors for process units. Operator displays shall be in process units.
2. The recorder station shall have a minimum of 4 Mbyte internal memory, 120 Mbyte disk drive, data storage rate from 20 ms, Ethernet capable.
3. Recorder power supply shall be 120 VAC unless otherwise specified. Recorder stations shall be nominally 6 inches high by 6 inches wide by not more than 19 inches deep. Preprogrammed functions shall be battery backed-up during times that power is not applied.
4. The recorder shall be TrendView MiniTrend V5 Recorder with 4 inputs or equal.

### B. Input/ Output

1. Input/ output capability shall be at a minimum as follows:

<u>Type</u>	<u>Quantity</u>
Analog inputs (s)	4
Analog outputs (s)	4

2. Analog inputs shall be 1 to 5 volts DC into not less than 250k ohms. Analog outputs shall be 4-20 mA.

### C. Preprogrammed Functions

1. Indicator stations shall be, as a minimum, provided with the preprogrammed functions:
  - a. Display functions:
    - 1) Process variable recording in process units.
    - 2) Process variable indication in process units.
    - 3) Process variable report generation.
  - b. Dynamic functions:
    - 1) Signal linearization (i.e. square root)

2) Signal averaging

2. Recorder shall have user entered programming of values for signal linearization, indication, recording, data logging, report generation, alarm set points, and chart speed, chart scale markings, and time scale markings.

D. Operator Interface

1. Operator interface shall include a 5.5" Color TFT display. Chart recorded functions shall include process variable and data logging including date (month, day, year), time, tag number, minimum, maximum, and average values. The recorder station shall also provide 103 segment bar graph or 4-digit display of process variable, input selection indication, malfunction indication, and record start/stop switch. Recording and indication shall provide 1 percent of full scale accuracy as a minimum.

E. Configuration Software

1. A Windows NT 4.0 based software capable of communicating with the recorder station and performing all configuration tasks shall be provided. The configuration software shall be TrendView Trend Manager Pro.

F. Spare Parts

1. The contractor shall provide as spare parts:
  - a. Five of each type of fuse used.
  - b. A spare 120 Mbyte disk

2.10 PLC

A. General

1. The system shall consist of, at a minimum, logic and memory cards, power supply, and I/O cards. Logic, memory, and local communication modules shall be plug-in style boards mounted on DIN rails. I/O cards and remote communications modules shall be plug-in style and capable of installation in the main chassis or in remote racks.

B. Major Components

1. The PLC(s) shall consist of the following major components
  - a. The processor memory and power supply
  - b. Input/ output devices.
  - c. Programming accessories.